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Fraye Model



What is it?

The Frayer model is a word categorization activity that helps learner to develop their understanding of concepts. Two versions of the Frayer model can be used. In the first, students provide a definition, list characteristics, and provide examples and non-examples of the concept. In the second, students analyze a word's essential and nonessential characteristics and refine their understanding by choosing examples and non-examples of the concept.

How could it be used in instruction?

There are many concepts that can be confusing because of their close relationships. The Frayer model provides students with the opportunity to understand what a concept is and what it is not. It gives students an opportunity to explain their understanding and to elaborate by providing examples and non-examples from their own lives.

How to use it:

- 1. Assign a concept that might be confusing because of its relational qualities.
- 2. Explain the Frayer model diagram.
- 3. Model how to fill out the diagram.
- 4. Provide students with time to practice with assigned terms.
- 5. Once the diagram is complete, let students share their work with other students. Display students' diagrams as posters throughout the unit so students can refer to the words and continue to add ideas.

Fraye Model Examples

Definition (in own words) . .	Characteristics
(WORD)	
Examples (from own life) . .	Non-Examples

Definition (in own words)	Characteristics
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A mathematical shape that is a closed plane figure bounded by 3 or more line segments	<ul style="list-style-type: none"> * Closed * Plane figure * More than 2 straight sides * 2-dimensional * Made of line segments
(POLYGON)	
Examples (from own life) <ul style="list-style-type: none"> * Pentagon * Hexagon * Square * Trapezoid * Rhombus 	Non-Examples <ul style="list-style-type: none"> * Circle * Cone * Arrow * Cylinder

Definition (in own words) The ideas, beliefs, and ways of doing things that a group of people who live in an area share.	Characteristics <ul style="list-style-type: none"> * Shared ideas * Shared beliefs * Shared practices
(CULTURE)	
Examples (from own life) <ul style="list-style-type: none"> * What my friends and I wear * Music we listen to 	Non-Examples <ul style="list-style-type: none"> * Color of my hair * Color of my eyes * Nature * Weather

Definition (in own words) A change in size, shape, or state of matter	Characteristics <p>New materials are NOT formed</p> <p>Same matter present before and after change</p>
(PHYSICAL CHANGE)	
Examples (from own life) <p>Ice melting</p> <p>Breaking a glass</p> <p>Cutting hair</p>	Non-Examples <p>Burning wood</p> <p>Mixing baking soda with vinegar</p>

Definition (in own words)	Characteristics
A whole number with exactly two divisors (factors) .	* 2 is the only even prime number * 0 and 1 are not prime * Every whole number can be written as a product of primes
(PRIME)	
Examples	Non-Examples
2,3,5,7,11,13...	* 5 is not a factor of 12 * 0 is not a factor of any whole number .

Essential Characteristics	Non-essential Characteristics
.	.
.	.
(WORD)	
Examples	Non-Examples
.	.
.	.

Essential Characteristics	Non-essential Characteristics
Feathers Hollow bones Warm blooded Breathe air with lungs Wings Beaks	Ability to fly
(BIRDS)	
Examples	Non-Examples
Robins Meadowlarks Parrots Eagles Ostriches	Bats Flying reptiles Insects Flying squirrels

Penguins	
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Essential Characteristics	Non-essential Characteristics
A person seeking the legal end to slavery in the U.S.A.	Northerner Race
(ABOLITIONIST)	
Examples	Non-Examples
John Brown Frederick Douglass Harriet Beecher Stowe Harriet Tubman	Jefferson Davis John C. Calhoun Slave trader Cotton farmer

Getting Ready to Read: Extending Vocabulary – The Frayer Model

MATHEMATICS

The *Frayer Model*, *Concept Circles*, and *Verbal and Visual Word Associations* are three examples of visual organizers that help students understand key words and concepts. The *Frayer Model* is a chart with 4 sections which can hold a definition, some characteristics/facts, examples, and non-examples of the word/concept. A *Verbal and Visual Word Association* is also a chart with 4 sections, but with one section reserved for a visual representation. A *Concept Circle* is an organizer which is divided into sections to hold words/symbols that are connected by a common relationship. Extending vocabulary using the Frayer Model follows.

Purpose

- Identify unfamiliar concepts and vocabulary.
- Create a visual reference for concepts and vocabulary.

Payoff

Students will:

- develop understanding of key concepts and vocabulary.
- draw on prior knowledge to make connections among concepts.
- compare attributes and examples.
- think critically to find relationships between concepts and to develop deeper understanding.
- make visual connections and personal associations.

Tips and Resources

- Preview by scanning text (see Skimming and Scanning to Preview Text, pg. 32 *Think Literacy: Cross-Curricular Approaches, Grades 7-12*).
- Include targeted vocabulary/concepts in a classroom word wall. See **Extending Vocabulary (Creating a Word Wall)**.
- Consider using the back of a word wall card for the vocabulary/concept organizer. When necessary, students can refer to the flip-side of a word wall card to clarify their understanding.
- Develop vocabulary/concept organizers in small groups using different strategies, for example, use a graffiti strategy by posting large Frayer Model charts (with a different word/concept on each chart). Students then move in small groups to add their knowledge to each posted chart.
- Strategically place the development of the organizer within the framework of the lesson/unit plan e.g., the day before beginning a geometry unit, assign a homework activity that asks students to find pictures of hexagons, octagons, and obtuse angles from printed media. Then, during the next day's "Minds On" activity, use the pictures in the development of the organizers.
- Be cognizant of math words that have different meanings in non-mathematical contexts (e.g., mean, rational, root, odd, radical, similar).
- Use organizers for developing understanding of symbols as well as words (e.g. \leq , π).
- Ensure that students understand that organizers such as the Concept Circle do not include all possible different types of examples.
See Student/Teacher Resource, *The Frayer Model – Samples*.
See Student/Teacher Resource, *The Frayer Model – Templates*.

Further Support

- Encourage students to use the organizers for reference as they might use a glossary or dictionary.
- Consider allowing students to use organizers during assessments.
- Use vocabulary organizers as assessment for learning to plan next steps.
- Combine the features of the organizers. For example, include pictures that provide a personal association within the sectors of a concept circle.
- When students are familiar with each type of organizer, consider allowing student choice in which type of organizer is used.

Getting Ready to Read: Extending Vocabulary – The Frayer Model

MATHEMATICS

What teachers do	What students do
Before <ul style="list-style-type: none"> Preview an activity or unit of study for key vocabulary and concepts. Modify the preview list using input from student preview lists. Use a graphic organizer to identify relationships among the words found during the preview and to show connections to students' prior knowledge from previous units, grades and/or student experiences. Select concepts that have potentially confusing connections or concepts that have several different characteristics. Determine which of the words are critical in developing deeper understanding of the mathematics in the activity or unit. Share a completed Frayer Model for a familiar non-mathematical concept but remove the name of the concept from the model. (See Student/Teacher Resource, <i>The Frayer Model – Samples</i>.) Create large Frayer Models on chart paper. 	<ul style="list-style-type: none"> Preview an activity or unit of study to create a list of unfamiliar vocabulary and concepts. Determine the concept name. Ask questions to clarify understanding of the attributes of a Frayer Model.
During <ul style="list-style-type: none"> Brainstorm as a whole class to create a list of words/phrases that connect to the concept. Form small groups and distribute one chart paper Frayer Model to each group. Direct students to place words and phrases from the brainstormed list into appropriate sections of the Frayer Model i.e. essential characteristics, non-essential characteristics, examples. Direct students to add more words/phrases as well as non-examples. Circulate and pose questions to refine understanding of the term. Ask a reporter from each group to present the group's Frayer Model. Post the models around the room. 	<ul style="list-style-type: none"> Contribute to brainstorming. List essential characteristics that apply to all examples. List non-essential characteristics that apply to subsets of the term/concept Suggest additional words and phrases and non-examples that refine understanding of the term. Ask questions to clarify understanding Actively listen and reflect on learning.
After <ul style="list-style-type: none"> Discuss how understanding of a concept is refined by thinking about non-examples. Consider assigning individual completion of a Frayer Model or a collective classroom model for display on a wall or on the back of a word wall card. Later in the lesson or unit of study, use a different colour pen to add new knowledge to the Frayer Model. 	<ul style="list-style-type: none"> Reflect on the presentations, discussions and posted Frayer Model and decide if a personal copy is needed.

Notes



The Frayer Model – Samples

Determine the unknown words in the given Frayer Models.

How does thinking about non-examples clarify your understanding about the word?

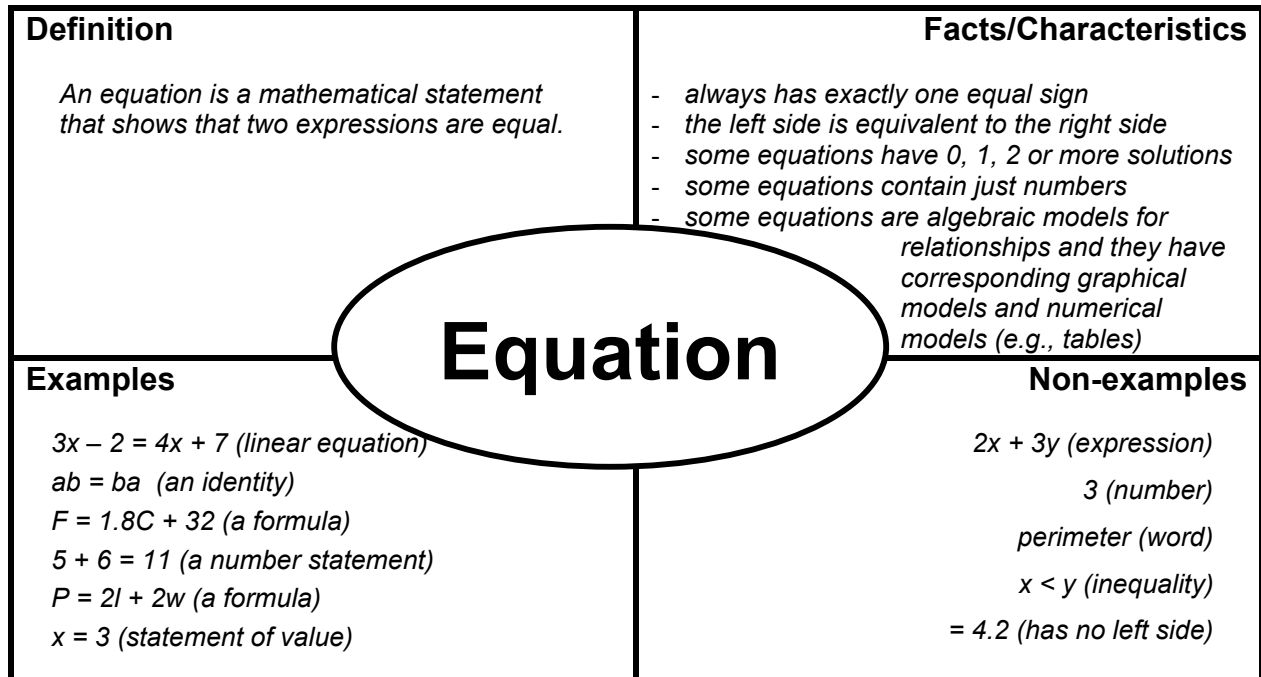
Essential Characteristics <ul style="list-style-type: none">- contains water- has a shore- is surrounded by land except at areas where it meets another body of water- larger than a pond	Nonessential Characteristics <ul style="list-style-type: none">- may contain water plants and fish- likely contains fresh water- may provide an area for recreational activity- may provide a habitat for wildlife- may be formed by glaciers- may be an expanded part of a river- may be formed by a dam
Examples <ul style="list-style-type: none">____ Ontario____ Simcoe____ TemagamiRamsey ________ VictoriaLoch NessLac Champlain(replace ____ with the unknown word)	Non-examples <ul style="list-style-type: none">- pond- puddle- swimming pools- Elliot Lake (town)- Georgian Bay- Pacific Ocean- St. Lawrence River

Essential Characteristics <ul style="list-style-type: none">- is a number- has no fractional or decimal part- can be modeled with two colour tiles	Nonessential Characteristics <ul style="list-style-type: none">- may be positive- may be negative- may be zero
Examples <ul style="list-style-type: none">-20325	Non-examples <ul style="list-style-type: none">0.5-1.2$\frac{2}{3}$π$\sqrt{2}$

Answers: lake, integer

The Frayer Model – Samples (Grade 8)

Notice that the top two boxes are titled “Definition” and “Facts/Characteristics”.
How does thinking about non-examples clarify your understanding about the word?



Complete a Frayer Model using the word _____.

Definition	Facts/Characteristics
Examples	Non-examples



The Frayer Model – Templates for Two Versions

- Choose the version whose headings best suit the concept/word.
- Print the template on card stock.
- Direct students to complete the template individually, in small groups or as a whole class.
- Print the vocabulary word on the reverse side then place the card on a word wall for future reference.

Essential Characteristics	Nonessential Characteristics
Examples	Non-examples

Definition	Facts/Characteristics
Examples	Non-examples